

What is claimed is:

- 1 A printing process, comprising
printing with a lithographic printing press having a printing plate,
stopping the printing press,
applying a plate conditioner to the printing plate, and
after a desired time, starting the printing press and resuming printing,
wherein the plate conditioner comprises an organic liquid having hydroxyl
functionality and a solid organic compound that is at least partially soluble in the
liquid having hydroxyl functionality.
2. A process according to claim 1, wherein the plate conditioner comprises at
least about 5% by weight of a liquid polyol.
3. A process according to claim 1, wherein the plate conditioner comprises
from about 10% by weight to about 99% by weight of a liquid polyol.
4. A process according to claim 1, wherein the plate conditioner comprises
from about 25% by weight to about 98% by weight of a liquid polyol.
5. A process according to claim 1, wherein the plate conditioner comprises
from 50% by weight to about 95% by weight of a liquid polyol.

6. A process according to claim 1, wherein the solid organic compound is selected from the group consisting of solid polyols, gums, and combinations thereof.
7. A process according to claim 1, wherein the solid organic compound has a melting point of at least about 25°C.
8. A process according to claim 1, wherein the organic liquid having hydroxyl functionality is selected from the group consisting of 1,2-propanediol, 1,3-propanediol, diethylene glycol, triethylene glycol, tetraethylene glycol, 1,4-butanediol, 1,3-butanediol, and combinations thereof.
9. A process according to claim 1, wherein the solid organic compound is selected from the group consisting of gum arabic, carboxyl methyl cellulose, carboxyl ethyl cellulose, salts of carboxyl-functional celluloses, poly(vinyl alcohol), poly(vinyl acetate), poly(vinyl pyrrolidone), solid polyalkylene glycols, trimethylolpropane, glycerol, pentaerythritol, dipentaerythritol, 2,2,4-trimethylpentanediol, triethylolpropane, hyperbranched polyols based on polyols having three or more hydroxyl groups, cyclohexanedimethanols, and combinations thereof.

10. A process according to claim 1, wherein the plate conditioner comprises from about 0.05% by weight to about 5% by weight of the solid organic compound.

11. A process according to claim 1, wherein the plate conditioner comprises from about 0.1% by weight to about 1% by weight of the solid organic compound.

12. A process according to claim 1, wherein the plate conditioner further comprises water.

13. A process according to claim 12, wherein the solid organic compound is salted with a base.

14. A process according to claim 1, wherein the ink comprises an emulsified fluid phase.

15. A printing process, comprising
- printing an ink with a lithographic printing press having a printing plate,
- stopping the printing press,
- applying a plate conditioner to the printing plate, and
- after a desired time, starting the printing press and resuming printing,

wherein the ink comprises

- a continuous phase comprising a polymer and
- an emulsified phase comprising a member selected from the group
- consisting of water, liquid polyols, and combinations thereof,

and wherein the plate conditioner comprises

- an organic liquid having hydroxyl functionality and
- a solid organic compound that is at least partially soluble in the liquid
- having hydroxyl functionality.

16. A process according to claim 15, wherein the emulsified phase comprises
- a liquid polyol selected from the group consisting of ethylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, propylene glycol, dipropylene glycol, and mixtures thereof.

17. A process according to claim 15, wherein the ink composition includes
- from about 5% to about 50% of the emulsified phase by weight.

18. A process according to claim 15, wherein the ink composition includes from about 10% to about 35% of the emulsified phase by weight.
19. A process according to claim 15, wherein the ink composition includes from about 20% to about 30% of the emulsified phase by weight.
20. A process according to claim 15, wherein the emulsified phase includes a weak acid or a weak base.
21. A process according to claim 15, wherein the emulsified phase includes a hygroscopic inorganic salt.
22. A process according to claim 15, wherein the emulsified phase is nonaqueous.
23. A process according to claim 15, wherein the polymer has an acid number of at least about 3 mg KOH per gram nonvolatile.
24. A process according to claim 15, wherein the polymer has an acid number of from about 3 to about 30 mg KOH per gram nonvolatile.
25. A process according to claim 15, wherein the polymer has an acid number of from about 8 to about 25 mg KOH per gram nonvolatile.

26. A process according to claim 15, wherein the polymer is branched.
27. A process according to claim 26, wherein the polymer has a number average molecular weight of between about 1000 and about 15,000 and a weight average molecular weight of at least about 100,000.
28. A process according to claim 26, wherein the continuous phase further comprises a member selected from the group consisting of polyester resins, hydrocarbon resins, alkyd resins, phenolic resins, rosins, cellulosic resins, and modifications thereof, and mixtures thereof.
29. A process according to claim 26, wherein the plate conditioner comprises at least about 5% by weight of a liquid polyol.
30. A process according to claim 26, wherein the plate conditioner comprises from about 25% by weight to about 98% by weight of a liquid polyol.
31. A process according to claim 26, wherein the plate conditioner comprises from 50% by weight to about 95% by weight of a liquid polyol.
32. A process according to claim 26, wherein the solid organic compound has a melting point of at least about 25°C.

33. A process according to claim 26, wherein the organic liquid having hydroxyl functionality is selected from the group consisting of 1,2-propanediol, 1,3-propanediol, diethylene glycol, triethylene glycol, tetraethylene glycol, 1,4-butanediol, 1,3-butanediol, and combinations thereof.

34. A process according to claim 26, wherein the solid organic compound is selected from the group consisting of gum arabic, carboxyl methyl cellulose, carboxyl ethyl cellulose, salts of carboxyl-functional celluloses, poly(vinyl alcohol), poly(vinyl acetate), poly(vinyl pyrrolidone), solid polyalkylene glycols, trimethylolpropane, glycerol, pentaerythritol, dipentaerythritol, 2,2,4-trimethylpentanediol, triethylolpropane, hyperbranched polyols based on polyols having three or more hydroxyl groups, cyclohexanedimethanols, and combinations thereof.

35. A process according to claim 26, wherein the plate conditioner comprises from about 0.1% by weight to about 1% by weight of the solid organic compound.

36. A process according to claim 26, wherein the plate conditioner further comprises water.